

S/N 07/964,362

#4
2-10-93
GB
PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Sang Young Kim et al.

Examiner: Unknown

Serial # : 07/964,362

Group Art Unit: 1107

Filed : October 21, 1992

Docket: 9983.3-US-01

Title : METHOD FOR FILLING CONTACT HOLES WITH METAL BY
TWO-STEP DEPOSITION

INFORMATION DISCLOSURE STATEMENT

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

Dear Sir:

In accordance with the Applicant's duty of good faith and candor toward the Patent Office, the following material is brought to the attention of the Examiner as possibly being of interest in connection with the above-identified patent application. Consideration of each of these documents by the Examiner is respectfully requested. Pursuant to the provisions of M.P.E.P. 609, Applicant further requests that a copy of Form 1449, marked as being considered and initialled by the Examiner, be returned to the undersigned with the next official communication.

Applicant represents that the listed documents are cited to comply with the duty of disclosure and that the documents submitted may be prior art but reserves the right, pursuant to 37 C.F.R. § 1.131 or otherwise, to establish otherwise. Applicant does not represent these documents to be material to the examination of this application, but has cited same to make it clear beyond any doubt that the duty of disclosure has been

RECEIVED
93 FEB - 9 10 20
GROUP 100

complied with. Moreover, Applicant does not represent that the enclosed documents have been reviewed in detail. There may be details disclosed in these documents of which Applicant is not aware.

The documents submitted herewith for the Examiner's consideration are as follows:

U.S. PATENT PUBLICATIONS

<u>PATENT NO.</u>	<u>INVENTOR</u>	<u>ISSUE DATE</u>
4,764,484	Mo	August 16, 1988

FOREIGN PATENT PUBLICATIONS

<u>PUBLICATION NO.</u>	<u>COUNTRY</u>	<u>PUBLICATION DATE</u>
2-231714	Japan	September 13, 1990

Brief Description of Relevance of Japanese Reference:

Japanese Laid-Open Publication No. 2-231714 discloses a method for filling contact holes with metal in a semiconductor device. A layer of material such as tungsten, molybdenum, titanium, or silicide is formed in contact holes over a first conductive line, and then a thin film of tungsten is deposited by a chemical vapor deposition (CVD) method. Thereafter, a second conductive line is formed over the thin film of tungsten deposited in the contact holes and over a multilayer insulating layer between the contact holes.

S/N 07/964,362

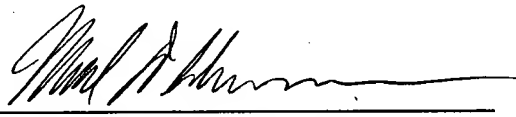
PATENT

The Examiner is respectfully requested to consider and make of record each of the above-discussed references during prosecution of the above-referenced application for patent.

Respectfully submitted,

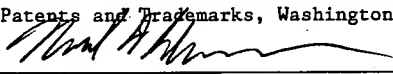
MERCHANT, GOULD, SMITH, EDELL,
WELTER & SCHMIDT, P.A.
3100 Norwest Center
90 South Seventh Street
Minneapolis, Minnesota 55402
(612) 332-5300

ATTORNEYS FOR APPLICANT(S)

By 
Michael D. Schumann
Reg. No. 30,422
MDS:MI:mi

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231 on:

January 21, 1993
(date of deposit)


Michael D. Schumann